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**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

In re Application of	:	Customer Number: 46320
	:	
Jeffrey CHASE et al.	:	Confirmation Number: 2068
	:	
Application No.: 10/733,996	:	Group Art Unit: 2157
	:	
Filed: December 11, 2003	:	Examiner: B. Burgess
	:	
For: AUTONOMIC SELECTION OF A REQUEST ROUTING POLICY BASED UPON CACHE EFFECTIVENESS	:	

APPEAL BRIEF

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

This Appeal Brief is submitted in support of the Notice of Appeal filed July 11, 2008, and in response to the Examiner reopening prosecution in the Office Action dated September 23, 2008, wherein Appellants appeal from the Examiner's rejection of claims 7-14.

I. REAL PARTY IN INTEREST

This application is assigned to IBM Corporation by assignment recorded on December 11, 2003, at Reel 014802, Frame 0372.

II. RELATED APPEALS AND INTERFERENCES

Appellants are unaware of any related appeals and interferences.

III. STATUS OF CLAIMS

Claims 1-14 are pending. Claims 7-14 are three-times rejected in this Application, and claims 1-6 are withdrawn from consideration pursuant to the provisions of 37 C.F.R. § 1.142(b). It is from the multiple rejections of claims 7-14 that this Appeal is taken.

IV. STATUS OF AMENDMENTS

The claims have not been amended subsequent to the imposition of the Third Office Action dated September 23, 2008 (hereinafter the Third Office Action).

V. SUMMARY OF CLAIMED SUBJECT MATTER

Referring to Figure 2 and also to independent claim 7, an autonomic request routing policy selection method is disclosed. In block 210, a contemporary trace footprint experienced by a coupled server cluster is identified (lines 3-4 of paragraph [0023]). In block 220, a cache allocation for the coupled server cluster is identified (lines 4-5 of paragraph [0023]). In block 230, at least two sets of hit rate metrics are retrieved, and each set of metrics correspond to a particular routing policy (lines 5-9 of paragraph [0023]). In block 240, the hit rate metrics are compared based upon the identified trace footprint and the identified cache allocation to determine a preferred routing policy (lines 1-8 of paragraph [0024]). In block 250, the preferred routing policy is selected for use in routing content requests to the server cluster (lines 8-9 of paragraph [0024]).

Referring to Figure 2 and also to independent claim 11, a machine readable storage having stored thereon a computer program for autonomic request routing policy selection is disclosed. The computer program comprises a routine set of instructions which when executed

1 by the machine cause the machine to perform the following steps. In block 210, a contemporary
2 trace footprint experienced by a coupled server cluster is identified (lines 3-4 of paragraph
3 [0023]). In block 220, a cache allocation for the coupled server cluster is identified (lines 4-5 of
4 paragraph [0023]). In block 230, at least two sets of hit rate metrics are retrieved, and each set of
5 metrics correspond to a particular routing policy (lines 5-9 of paragraph [0023]). In block 240,
6 the hit rate metrics are compared based upon the identified trace footprint and the identified
7 cache allocation to determine a preferred routing policy (lines 1-8 of paragraph [0024]). In block
8 250, the preferred routing policy is selected for use in routing content requests to the server
9 cluster (lines 8-9 of paragraph [0024]).

VI. GROUND OF REJECTION TO BE REVIEWED ON APPEAL

1. Claims 7-14 were rejected under 35 U.S.C. § 103 for obviousness based upon Mangipudi et al., U.S. Patent Publication No. 2004/0162901 (hereinafter Mangipudi), in view of Yang, U.S. Patent Publication No. 2002/0199014 (hereinafter Yang).

VII. ARGUMENT

As is evident from Appellants' previously-presented comments during prosecution of the present Application and from Appellants' comments below, there are questions as to how the limitations in the claims correspond to features in the applied prior art. In this regard, reference is made to M.P.E.P. § 1207.02, entitled "Contents of Examiner's Answer." Specifically, the following is stated:

(A) CONTENT REQUIREMENTS FOR EXAMINER'S ANSWER. The examiner's answer is required to include, under appropriate headings, in the order indicated, the following items:

...

(9)(c) For each rejection under 35 U.S.C. 102 or 103 where there are questions as to how limitations in the claims correspond to features in the prior art even after the examiner complies with the requirements of paragraphs (c) and (d) of this section, the examiner must compare at least one of the rejected claims feature by feature with the prior art relied on in the rejection. The comparison must align the language of the claim side-by-side with a reference to the specific page, line number, drawing reference number, and quotation from the prior art, as appropriate. (emphasis added)

Therefore, if the Examiner is to maintain the present rejections and intends to file an Examiner's Answer, the Examiner is required to include the aforementioned section in the Examiner's Answer.

THE REJECTION OF CLAIMS 7-14 UNDER 35 U.S.C. § 103 FOR OBVIOUSNESS BASED UPON MANGIPUDI IN VIEW OF YANG

For convenience of the Honorable Board in addressing the rejections, claims 8-14 stand or fall together with independent claim 7.

On October 10, 2007, the Patent Office issued the "Examination Guidelines for Determining Obviousness Under 35 U.S.C. 103 in View of the Supreme Court Decision in KSR International Co. v. Teleflex Inc.," 73 Fed. Reg. 57,526 (2007) (hereinafter the Examination

Guidelines). Section III is entitled "Rationales To Support Rejections Under 35 U.S.C. 103." Within this section is the following quote from the Supreme Court: "rejections on obviousness grounds cannot be sustained by merely conclusory statements; instead there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." KSR Int'l Co. v. Teleflex Inc., 127 S. Ct. 1727, 1741 (2007) (quoting *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)).

Referring to the first column on page 57,529 of the Examination Guidelines, the following is a list of rationales that may be used to support a finding of obviousness under 35 U.S.C. § 103:

(A) Combining prior art elements according to known methods to yield predictable results;

(B) Simple substitution of one known element for another to obtain predictable results;

(C) Use of known technique to improve similar devices (methods, or products) in the same way;

(D) Applying a known technique to a known device (method, or product) ready for improvement to yield predictable results;

(E) "Obvious to try" - choosing from a finite number of identified, predictable solutions, with a reasonable expectation of success;

(F) Known work in one field of endeavor may prompt variations of it for use in either the same field or a different one based on design incentives or other market forces if the variations would have been predictable to one of ordinary skill in the art;

(G) Some teaching, suggestion, or motivation in the prior art that would have led one of ordinary skill to modify the prior art reference or to combine prior art reference teachings to arrive at the claimed invention.

Upon reviewing the Examiner's analysis, the Examiner appears to be employing rationale (G). If the Examiner is not relying upon rationale (G), Appellants request that the Examiner clearly identify the rationale, as described in the Examination Guidelines, being employed by the Examiner in rejecting the claims under 35 U.S.C. § 103.

Referring again to rationale (G), as discussed on page 57,534 of the Examination Guidelines, the following findings of fact must be articulated by the Examiner:

(1) a finding that there was some teaching, suggestion, or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings;

(2) a finding that there was reasonable expectation of success; and

(3) whatever additional findings based on the Graham factual inquiries may be necessary, in view of the facts of the case under consideration, to explain a conclusion of obviousness.

Referring to the paragraph entitled "Office Personnel as Factfinders" on page 57,527 of the Examination guidelines, the following was stated:

Office personnel fulfill the critical role of factfinder when resolving the *Graham* inquiries. It must be remembered that while the ultimate determination of obviousness is a legal conclusion, the underlying *Graham* inquiries are factual. When making an obviousness rejection, Office personnel must therefore ensure that the written record includes findings of fact concerning the state of the art and the teachings of the references applied. In certain circumstances, it may also be important to include explicit findings as to how a person of ordinary skill would have understood prior art teachings, or what a person of ordinary skill would have known or could have done. Factual findings made by Office personnel are the necessary underpinnings to establish obviousness.

In Graham v. John Deere Co., 383 U.S. 1, 148 USPQ 459 (1966), the Supreme Court set forth the factual inquiries that are to be applied when establishing a background for determining obviousness under 35 U.S.C. 103. These factual inquiries are summarized as follows:

- (A) Determine the scope and content of the prior art;
- (B) Ascertain the differences between the prior art and the claims at issue;
- (C) Resolve the level of ordinary skill in the pertinent art; and
- (D) Evaluate any indicia of nonobviousness.

However, in order to make a proper comparison between the claimed invention and the prior art, the language of the claims must first be properly construed. See In re Paulsen, 30 F.3d 1475, 1479 (Fed. Cir. 1994). See also, Panduit Corp. v. Dennison Mfg. Co., 810 F.2d 1561, 1567-68 (Fed. Cir. 1987) (In making a patentability determination, analysis must begin with the question, "what is the invention claimed?" since "[c]laim interpretation, ... will normally control the remainder of the decisional process.") See Gechter v. Davidson, 116 F.3d 1454, 1460 (Fed. Cir. 1997) (requiring explicit claim construction as to any terms in dispute).

Upon reviewing the Examiner's analysis in view of the requirements discussed above necessary for the Examiner to establish a prima facie case of obviousness, Appellants recognize several deficiencies in the Examiner's analysis.

Prior to addressing the substance of the Examiner's arguments, Appellants note that in the Second Office Action, the Examiner also rejected claims 7-14 under 35 U.S.C. § 103 for obviousness based upon Mangipudi in view of Yang. This rejection was traversed on pages 9-11

of the First Appeal Brief dated July 11, 2008. In the present Third Office Action, the Examiner again rejects claims 7-14 under 35 U.S.C. § 103 for obviousness based upon Mangipudi in view of Yang. However, the Examiner has slightly modified the rejection by acknowledging that the primary reference of Mangipudi fails to teach a particular claimed limitation within claim 7 while relying upon Yang to teach this limitation.

Specifically, the Examiner is now asserting in the Third Office Action that Mangipudi fails to teach "retrieving at least two sets of hit rate metrics, each set of metrics corresponding to a particular routing policy." Since the Examiner is only relying upon the combination of Mangipudi and Yang, Appellants proceed on the assumption that the Examiner is relying upon Yang to teach these limitations. However, of particular interest is the Examiner's characterization of Yang within the Third Office Action. Specifically, the Examiner asserted the following on page 6 of the Third Office Action:

However, in an analogous art, Yang teaches identifying the machines in the cluster and their memory space (cache allocation). Yang further teaches monitoring and tracing (trace footprint) web traffic of the server cluster for four months. Characteristics (hit rate metrics) of the URL requests are used to evaluate processing time. These measurements and results are stored in the URL table and used to make routing decisions (paragraphs [0017, 0027, 0033, 0046-0047, 0049]).

This characterization of Yang is of interest in that the Examiner employed the exact same characterization of Yang on page 8 of the Second Office Action. Notably absent from this characterization is any identification, within Yang, of the claimed "retrieving at least two sets of hit rate metrics, each set of metrics corresponding to a particular routing policy." Appellants have also reviewed the Examiner's cited paragraphs [0017], [0027], [0033], [0046]-[0047], and [0049], and absent from these passages is any mention of the claimed "retrieving at least two sets of hit rate metrics, each set of metrics corresponding to a particular routing policy." Thus, since the Examiner has admitted that Mangipudi fails to teach the limitations at issue and the Examiner

has failed to identify, within Yang, the passages that allegedly teach these limitations, the Examiner has failed to establish a prima facie case of obviousness.

The Examiner is also relying upon Yang to teach the claimed "identifying a contemporary trace footprint experienced by a coupled server cluster." The only mention of "trace" is found in paragraph [0047], which describes "the packet level traces (by tcpdump) of the web traffic had been collected to and from our server system for about four months." Packet level traces that have been collected for about four months does not teach the claimed contemporary trace footprint.

The Examiner also relies upon Yang to teach the claimed "comparing said hit rate metrics based upon said identified trace footprints and said identified cache allocation to determine a preferred routing policy." Not only does Yang fail to teach the claimed hit rate metrics or trace footprint, Yang also fails to teach determining a preferred routing policy based, in part, on identified cache allocation. In fact, the term "cache" is completely absent from Yang. Moreover, the passages within Mangipudi cited by the Examiner to teach the claimed "cache allocation" also does not refer to cache. Although these passages refer to memory, memory (or memory utilization) does not necessarily (i.e., inherently) refer to cache (or cache allocation). Therefore, the Examiner has failed to properly determine the scope and content of both Mangipudi and Yang.

1 Conclusion

2 Based upon the foregoing, Appellants respectfully submit that the Examiner's rejection
3 under 35 U.S.C. § 103 based upon the applied prior art is not viable. Appellants, therefore,
4 respectfully solicit the Honorable Board to reverse the Examiner's rejection under 35 U.S.C. § 103.

To the extent necessary, a petition for an extension of time under 37 C.F.R. § 1.136 is hereby made. Please charge any shortage in fees due under 37 C.F.R. §§ 1.17, 41.20, and in connection with the filing of this paper, including extension of time fees, to Deposit Account 09-0461, and please credit any excess fees to such deposit account.

Date: November 30, 2008

Respectfully submitted,

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CUSTOMER NUMBER 46320

VIII. CLAIMS APPENDIX

7. An autonomic request routing policy selection method comprising the steps of:
identifying a contemporary trace footprint experienced by a coupled server cluster;
identifying a cache allocation for said coupled server cluster;
retrieving at least two sets of hit rate metrics, each set of metrics corresponding to a particular routing policy;
comparing said hit rate metrics based upon said identified trace footprint and said identified cache allocation to determine a preferred routing policy; and,
selecting said preferred routing policy for use in routing content requests to said server cluster.

8. The method of claim 7, further comprising the steps of:
computing with said hit rate metrics, an optimal server cluster configuration for said preferred routing policy; and,
provisioning an optimal number of servers in said server cluster based upon said computed optimal server cluster configuration.

9. The method of claim 7, wherein said selecting step comprises the step of selecting a server load balancing type routing policy when said identified cache allocation approaches in value said identified trace footprint.

10. The method of claim 7, wherein said selecting step comprises the step of selecting a content localizing type routing policy when either said identified cache allocation is small, or when said trace footprint is large.

11. A machine readable storage having stored thereon a computer program for autonomic request routing policy selection, the computer program comprising a routine set of instructions which when executed by the machine cause the machine to perform the steps of:

identifying a contemporary trace footprint experienced by a coupled server cluster;

identifying a cache allocation for said coupled server cluster;

retrieving at least two sets of hit rate metrics, each set of metrics corresponding to a particular routing policy;

comparing said hit rate metrics based upon said identified trace footprint and said identified cache allocation to determine a preferred routing policy; and,

selecting said preferred routing policy for use in routing content requests to said server cluster.

12. The machine readable storage of claim 11, further comprising the steps of:

computing with said hit rate metrics, an optimal server cluster configuration for said preferred routing policy; and,

provisioning an optimal number of servers in said server cluster based upon said computed optimal server cluster configuration.

13. The machine readable storage of claim 11, wherein said selecting step comprises the step of selecting a server load balancing type routing policy when said identified cache allocation approaches in value said identified trace footprint.

14. The machine readable storage of claim 11, wherein said selecting step comprises the step of selecting a content localizing type routing policy when either said identified cache allocation is small, or when said trace footprint is large.

IX. EVIDENCE APPENDIX

No evidence submitted pursuant to 37 C.F.R. §§ 1.130, 1.131, or 1.132 of this title or of any other evidence entered by the Examiner has been relied upon by Appellants in this Appeal, and thus no evidence is attached hereto.

X. RELATED PROCEEDINGS APPENDIX

Since Appellants are unaware of any related appeals and interferences, no decision rendered by a court or the Board is attached hereto.